**KARTHIK**

**NETWORK ENGINEER**

**PROFESSIONAL SUMMARY:**

* Over 6+ years’ experience in routing, switching, firewall technologies, implementation and troubleshooting of complex network systems, , troubleshooting, IP network design, Migration, Configuration Management
* Build VPN for B2B Communications and remote access VPN including SSL VPN.
* Identify and troubleshoot network connectivity issues through firewall using Command line utilities such as tcpdump and review with Wireshark
* Strong hands on experience in installing, configuring , and troubleshooting of Cisco 3800, 3600, 2800, 2600, and 1800 series Routers, Cisco Catalyst 6500, 4500, 3750, 2950 and 3500XL series switches.
* Installed Various Nexus Switches such as 7000, 5000 and 2000
* Experience in configuring and troubleshooting of routing protocols RIP v1/v2, EIGRP, OSPF and BGP
* In depth understanding of IPv4 and implementing of Subnetting, IP Addressing, and good knowledge of OSI and TCP/IP models
* Extensive knowledge of configuring and troubleshooting Layer 3 Routing protocols RIP, IGRP, EIGRP, OSPF, EBGP, IBGP, BGP and layer 2 protocols, VTP, STP, RSTP
* Hands on experience configuring and upgrading Cisco Adaptive Security Device Manager, Fortigate 3000C, Cisco Prime Infrastructure, Mobility Service Engine, Cisco Wireless Control
* Experience working in Enterprise Data centers with over 200 Firewalls.
* Proficient in design, implementation, management and troubleshooting of Check Point Security Gateways (including GAIA), Palo Alto Firewalls as well as Cisco ASA firewalls.
* Experienced in Day to Day operations as well as Upgrades and Migrations including Ground up and new installations
* Worked on Enterprise scale Management Platforms Multi-Domain Security Smart console on Checkpoint as well as Panorama on Palo Alto and Cisco Security Manager CSM for Cisco ASA.
* Experience in layer-3 Routing and layer-2 Switching. Dealt with Cisco router models like 7200, 3800, 3600, 2800, 2600, 2500, 1800 series, Cisco Catalyst 6500, 4500, 3750, 3500, 2900 series switches.
* Worked Experience in configuring and troubleshooting OSPF, EIGRP and BGP on cisco routers
* Working experience in configuring and troubleshooting Ether-channel, STP, RSTP, VLAN on cisco Swtiches
* Experience in maintaining stable STP topology using protocols such as Port fast, BPDU guard, root guard and UDLD
* Worked on Cisco 2300, 4000, 6500 series Router and Cisco 1600, 2900, 6500 series switch
* Configuring VLANs/routing/NAT with the firewalls like Cisco ASA (5510-X,5525-X,5585-X), Palo Alto (3020,5020,7020).
* Extensive experience in upgrade, backup, password recovery of Cisco IOS
* Experience in implementing Network Security Policy and adding Firewall Rules
* Switching tasks include VTP, ISL/ 802.1q, IPsec Tunneling, VLAN, Ether Channel, STP and RSTP
* Experienced in configuring Cisco ASA in different modes and implementing dynamic routing protocols
* Experience in Network security including NAT/PAT, ACL, and ASA/PIX Firewalls
* Experienced in configuring policies and NAT for DMZ on ASA 5540
* Well Experienced in configuring protocols HSRP, VRRP, ICMP, IGMP, PPP, PAP, CHAP.
* • Working on security levels with RADIUS, TACACS+..
* Implemented traffic filters using Standard and Extended access-lists, Distribute-Lists, and Route Maps.
* Experience in installing and configuring DHCP server.
* Experience in Designing and assisting in deploying enterprise wide Network Security and High Availability Solutions for ASA.
* Worked extensively in Configuring, Monitoring and Troubleshooting Cisco's ASA 5500/PIX security appliance, Failover DMZ zoning & configuring VLANs/ routing/ NATing with the firewalls
* Extensive experience with virtualizing application/operating Systems deployment.
* Good analytical, communication, problem solving, decision making, presentation and organization skills

**TECHNICAL SKILLS:**

Networking Concepts : OSI Model, TCP/IP, IP addressing, Static Routes, Access lists

Protocols : ARP, FTP, ICMP, DNS, ICMP, DHCP, TCP, IP, UDP, TELNET

Cabling : CAT 5, CAT 5e, CAT 6, CAT 6a

IP Routing Protocols : IBGP, EBGP,OSPF, EIGRP

LAN Switching : VLAN, STP, PVST, VTP, ISL, HSRP,MST, RPVST,LACP

Checkpoint & Firewalls : Cisco ASA/Routers, Bluecoat SG, McAfee/IBM IPS, McAfee ATD, Vulnerability Scanners, Citrix Netscalers, OSPF/BGP and VPN, PIX, IOS Firewall

Network Security : NAT/PAT, Ingress & Egress Firewall Design, VPN, Configuration, Internet Content Filtering, Load Balancers

WAN /Core : ATM, Frame Relay, PPP, HDLC

Operating Systems : DOS, MacOS, Windows Server 2008, Linux

Other : Cisco Anyconnet, Cisco ISE, Cisco Security Manager, Wireshark, Solarwinds, Microsoft Visio, Microsoft Project, MS Office

**Security**: Site- to-site VPNs, Remote Access VPNs, VPN Client, SSL VPN, Clientless SSL VPN, IPSec, AAA (RADIUS/TACACS+), Access Control Lists, Traffic Filtering, Failover, Transparent Firewall, Security Contexts, IOS Security Features, Cisco Secure ACS, Cisco CSA, DMZs, IDS, DoS Prevention.

**EDUCATION:**

* Masters of Science (M.S.) in Telecommunication and Technology/ Technicians from Southern Methodist University, Dallas, TX
* Bachelor of Engineering (B.E.) in Electronics and Telecommunication from Xavier Institute of Engineering, Mumbai, India

**CERTIFICATION:**

* Cisco Certified Network Professional (CCNP Security) - CSCO12595368
* Cisco Certified Network Professional (CCNP Routing and Switching) - CSCO12595368
* Securing Cisco Networks with Sourcefire Intrusion Prevention System - CSCO12595368
* Securing Cisco Networks with SourcefireFireAMP endpoints - CSCO12595368
* Palo Alto Certified Network Security Engineer (PCNSE 7) - PAN001321
* Cisco Certified Network Associate (CCNA Routing and Switching)
* Cisco Certified Network Associate (CCNA Security)

**PROFESSIONAL EXPERIENCE:**

**Bedroc, Franklin, TN Feb 2016 to Mar 2017**

**Network Engineer**

My primary responsibility is to design and implement network and security solution to our health care clients and also troubleshooting and maintaining the clients networks.

**Responsibilities:**

* Day to Day work involves managing and administering Firewall appliances including Check Point, Cisco ASA and Palo Alto Devices. Installation, configuration and troubleshooting cisco Routers and switches.
* Firewall Policy provisioning on PAN devices using PANORAMA MGMT platform and Configure & troubleshoot PAN devices in Active/Standby High Availability
* Configure and Troubleshoot Cisco Routers – 3600, ISR- 4451 and 4431, ASR-1000-X , Switches – 3750, 3850
* Configure and troubleshoot Routing protocols (Static and Dynamic (OSPF, BGP, HSRP, BGP, OSPF, EIGRP)) , physical cabling, stacking, IP addressing, LAN–WAN Networks
* Deploying Route Maps, Distribute-List, Prefix-List, Extended and Standard access-lists, Redistribution of OSPF, BGP, EIGRP, RIP into each other.
* Configuring VRFs, HSRP, VRRP, VLANS, STP, ETHER-CHANNELS on switches 6880, and access layer switches - 4510, 4948
* Implemented and deployed Cisco ASA firewall like ASA- 5525-X and 5555-X (Cisco Sourcefire)
* Implemented and Managed Palo alto Firewalls (PA-200, PA- 3000, PA-5020)
* Implemented security policies using ACL, Firewall, SSL VPN, AAA (TACACS+ & RADIUS) and deploying GRE Tunnel on Cisco ASA
* Worked on creating IPsec site-to-site tunneling for one client location to another
* Oversee network and equipment upgrades to include IOS, image upgrades, and configuration changes.
* Designed and maintained Visio documentation of network topologies
* Assisted in creating python scripts for network automation
* Maintained and monitored the network packet output using Wireshark
* Worked as Network Engineer in the assigned data center, Involved in implementation of new Nexus network with N2K, N5K 5.1 on version 5.2(1) N1 (1) and N7K on version 6.1(2).
* Installed and configured different vendor products in Lab environments like Checkpoint, F5 Load Balancer

**Environment:** Cisco 2948/3560/4500/3560/3750/3550/3500/2960 6500 switches and Cisco 3640 /12000/7200/3845/3600/2800, ASR 1K, 9K, ISR-4451,4431 Cisco Nexus 7K/5K, Cisco ASA 5525-X,5585-x,5555-X F5 BIGIP LTM, OSPF, BGP, EIGRP, LAN, WAN, HSRP, Palo Alto- PA-2K, 3K, 5K

**Barigo Holdings Inc., Cary, NC                                                                                                                    Aug 2016 to Present**

**Network Engineer (Part Time – Remote)**

My primary responsibility is to provide effective security and network implementation services. I additionally assisted installations at customer sites, support internal security and networking infrastructure.

**Responsibilities:**

* Worked as Network Engineer in the assigned data center, Involved in implementation of new Nexus network with N2K, N5K 5.1 on version 5.2(1) N1 (1) and N7K on version 6.1(2).
* Support, troubleshoot, install, and configure network security solutions including firewalls, intrusion prevention systems, network access control, Email security, Web security, Web application firewalls, and application layer gateways
* Involved in designing and migration of old network, i.e., migration of around 4000 + servers, filers and storage devices from 6500 switches to 7K Nexus switches.
* Build, maintain and implementation of fiber channel on optical network devises.
* Designed and implemented remote access dial up, broadband, high-speed Internet
* Upgrade Cisco Routers and Switches by configure traffic shaping to optimize network utilization of Frame-relay Backbone.
* Worked with newly acquired companies to integrate LANs across IPSec VPN for file sharing and piloting of VoIP phones.
* Successfully designed and implemented the Cisco 26xx, 36xx, 35xx, 72xx and Catalyst Series Switches
* Responsible for implementing VLANS and configuring ISL trunk on Fast-Ethernet channel between switches
* Configuring, installing, operating, troubleshooting complex routed LAN &WAN network, and IP addressing.
* Implementation and configuration of Routing Protocols (BGP, OSPF, EIGRP, IGRP, RIPv2), TCP/IP, HTTP, Frame-Relay, ATM, IPX/SPX.
* Implementation of DNS, DHCP, SNMP, FTP, TFTP, VRRP/HSRP
* Deploying Route Maps, Distribute-List, Prefix-List, Extended and Standard access-lists, Redistribution of OSPF, BGP, EIGRP, RIP into each other.
* Documentation of network topology, processes, and system design.
* Installed and configured different vendor products in Lab environments like Checkpoint, Riverbed Steelhead, F5 Load Balancer.

**Environment:** Cisco catalyst series switches 4507, 3560X and 2950T; and OSPF, BGP, INFOBLOX, VLANs, STP, NAT, Cisco 26xx, 36xx, 35xx, 72xx

**Barracuda Networks, Ann Arbor, MI May 2015 to Feb 2016**

**Network Engineer**

My Primary responsibility is to configure and maintain barracuda internal networks across all the offices, assigning security policy and implementing cisco routers and switches

**Responsibilities:**

Worked on configuration and troubleshooting Cisco Catalyst 4500 and 3550 series, static, IGRP, EIGRP, and OSPF Routing Protocols on Cisco 2600, 2800, 3600, 7300 series routers

* Implemented VLSM, STP, VTP, VLAN, Ether-Channel on Cisco switches -3750, 3850 series switches
* Troubleshoot LAN/WAN issues
* Tracked, updated and resolved assigned incidents such as creating & modifying ACL on firewall, Security policies and VPN tunnels on barracuda X-200 and X-300 firewall
* Tested and debugged of test cases using Perl Scripting per the test plans provided by the client in Linux environment
* Troubleshoot and resolve call quality issues regarding RTP audio streams and SIP signaling for Cisco and Polycom VoIP phones
* Maintained and monitored the network packet output using Wireshark
* Configuring FirePOWER on Cisco ASA including IPS (NGIPS), Application visibility and Control as well as Advanced malware protection.
* Configure and tweak the URL Filtering on Cisco ASA with FirePOWER.
* Provided port binding, port security and router redundancy through HSRP.
* Designed ACLs, VLANs, troubleshooting IP addressing issues and taking back up of the configurations on switches and routers.
* Configured Site-Site VPN on Palo Alto Firewall on one side and Fortinet on the other side.
* Implemented many number of security policy rules and NAT policy rules on Palo Alto, created Zones.
* Implemented Palo Alto Firewall interface, Palo Alto IDS and VLAN.
* Analyzed the Policy rules, monitor logs and documented the Network/Traffic flow Diagram of the Palo Alto Firewalls placed in the Data Center with MS Visio.
* Configure FirePOWER using CLI as well as Fire SIGHT Management Center.
* Support Disaster Recovery for the applications between Primary and DR Data center locations.
* Configure LACP port Channel, virtual port channel (VPC).

**Environment:** Barracuda firewall – X300, X400, X600,  Cisco 2800, 2900, 3900, 7200, 7600, ASR9000, GSR 12k routers, Cisco Catalyst Switch 6500, 4500, 3550, 3850, Cisco ISR- 4451

**Anritsu, Dallas, TX May 2014 to May 2015**

**Network Engineer**

My responsibility is to maintain internal network and implement changes to the existing networks.

**Responsibilities:**

* Configured Cisco Routers for OSPF, EIGRP, Static and default route. (Cisco Routers 3600, 2800, 2600, Cisco switches 3750, 3500)
* Configured and build IPsec VPN tunnels, execute configurations and migrate IPSec tunnels to new environment and creating AAA servers on Cisco ASA 5500 series firewall.
* Designed ACLs, VLANs, troubleshooting IP addressing issues and taking back up of the configurations on switches and routers
* Configured of EIGRP and OSPF as interior gateway protocol with route filtering and route redistribution
* Installed various code level packages for Red Hat Linux application Linux nodes to support client needs
* Worked closely with a Network Engineer, developed configuration review procedures, configured and managed router and switches
* Responsible for cabling, racking and stacking of Cisco routers, switches
* High level experience on creating and implementing custom design iRules, Health monitor and SSL profile as per the System engineer request.
* Implemented NAT solution's on wan applications.
* Oversee network and equipment upgrades to include IOS, image upgrades, and configuration changes.
* Configure FirePOWER using CLI as well as Fire SIGHT Management Center.
* Support Disaster Recovery for the applications between Primary and DR Data center locations.
* Creating Vlans, trunking and creating subinterfaces as well as configuring VRF on Nexus 7k Switches.
* Configure LACP port Channel, virtual port channel (VPC).

**Environment:**

Tcpdump,SolarWinds, Wire Shark, Cisco ASA 5500 series/Pix, Cisco routers- 1841, 2620XM, 2621XM, 2811, 5300, 7200, 2511 and switches- 2950, 2950T, 2960, 3560-24PS, Catalyst 6509 series, IP routes BGP, OSPF, Cisco LAN switches

**BITV Cable Networks (Hathway Internet) Mumbai, India May 2011to June 2013**

**Network Support Engineer**

My primary responsibility is to provide tier-1 and tier-2 support to our clients and manage internal networks.

**Responsibilities:**

* Served as part of a team of network engineers responsible for base wide network troubleshooting of Cisco Layer 3, Layer 2 devices
* Created optimization project plans and helped implementation engineers with follow through and completion of optimization plans.
* Installed new equipment to RADIUS and worked with MPLS-L3VPN and TACACS configurations. Worked on different protocols like TCP/IP, UDP, SNMP, ICMP, RIP, POP3, BGP, EIGRP,OSPF
* Design, implement and administer IPv4 enterprise network infrastructure utilizing Cisco routers
* Experience working with design and deployment of MPLS Layer 3 VPN cloud, involving VRF, Route Distinguisher (RD), Route Target (RT), Label Distribution Protocol (LDP) & MP-BGP
* Implementation and operational support of routing protocols and topologies including BGP, OSPF, MPLS, DMVPN
* Implemented EIGRP, OSPF & BGP and configured security policies- NAT, PAT & Access Control Lists (ACL)
* Experience working with cat6000, 6500, 7600 devices
* Identify, design and implement flexible, responsive, and secure technology services
* Experience in network security in a telecommunications environment
* Experience in Configuring, upgrading and verifying NX-OS operation system with OSPF, BGP
* Tests scope to include application modules, integration layer and full end-2-end testing incorporating various device & web-top clients
* Demonstrated that the video segmented system works reliably with the actual satellite network going through the core node, network infrastructure accelerator, and receive via satellite modem
* Experience converting Cat OS to Cisco IOS on the Cisco 6500 switches
* Updated network diagram using Microsoft Visio
* Tested various networks, which works on the protocols like of TCP/IP (IP, TCP, UDP, SNMP, DNS, DHCP, FTP, HTTP, HTTPS, ICMP, SMTP, ARP, IPSEC and NAT)
* Datacenter environment with Nexus 2K FEX, 5500 and 7010, Cisco Catalyst switches, F5 LTM, Cisco ASA's, Cisco ISR and ASR Routers
* Implemented Positive Enforcement Model with the help of Palo Alto Networks
* Innovated with support of Palo Alto for remote and mobile users and for analyzing files for malware in a separate (cloud-based) process that does not impact stream processing. Worked on different phases of testing such as Sanity Testing, Functionality Testing, Smoke Testing, System Testing, Installation Testing, Compatibility Testing, Regression Testing, Stress Testing and UAT Testing
* Troubleshooting of complex LAN/WAN infrastructure that include routing protocols EIGRP, OSPF & BGP, MPLS

**Environments:** ASR 5500, Net Flow, SolarWinds, Wire Shark, Cisco ASA 5500 series/Pix, Cisco routers- 1841, 2620XM, 2621XM, 2811, 5300, 7200, 2511 and switches- 2950, 2950T, 2960, 3560-24PS, Catalyst 6509 series, IP routes BGP, OSPF, Cisco LAN switches, Proxy server, Troubleshooting DHCP